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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,579	12/18/2000	Tomoko Ishikawa	199648US0	9891

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EXAMINER	
DOTE, JANIS L	
ART UNIT	**PAPER NUMBER**
1756	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/737,579	ISHIKAWA ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6-8,14,15,19,24-26,31,33 and 39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,14,15,24-26,31,33 and 39* is/are rejected.

7)☒ Claim(s) *4,6-8 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The examiner acknowledges the cancellation of claims 2, 5, 9-13, 16-18, 20-23, 27-30, 32, 34-38, and 40-69, and the amendment to claim 6, set forth in the amendment filed on Aug. 16, 2005. Claims 1, 3, 4, 6-8, 14, 15, 19, 24-26, 31, 33, and 39 are pending.

2. The objection to the specification set forth in the office action mailed on Feb. 16, 2005, paragraph 3, has been withdrawn in response to the amended paragraph beginning at page 47, line 11, of the specification, filed on Aug. 16, 2005.

The rejection of claims 68 and 69 under 35 U.S.C. 112, first paragraph, set forth in the office action mailed on Feb. 16, 2005, paragraph 6, has been mooted by the cancellation of claims 68 and 69 in the amendment filed on Aug. 16, 2005.

The rejections of claims 27-30, 32, 34, 40, 57-62, 65, and 67 under 35 U.S.C. 102(b)/103(a) over US 5,935,751 (Matsuoka'751), and of claims 37, 38, 42, 63, 64, and 66 under 35 U.S.C. 103(a) over Matsuoka'751 combined with the other cited prior art, set forth in the office action mailed on Feb. 16, 2005, paragraphs 8-11, has been mooted by the cancellation of claims 27-30, 32, 34, 37, 38, 40, 42, and 57-67 in the amendment filed on Aug. 16, 2005.

The rejections of claims 27-30, 32, 34, 40, 57-62, 65, and 67 under 35 U.S.C. 102(e)/103(a) over US 2002/0028402 A1 (Matsuoka'402), and of claims 37, 38, 42, 63, 64, and 66 under 35 U.S.C. 103(a) over Matsuoka'402 combined with the other cited prior art, set forth in the office action mailed on Feb. 16, 2005, paragraphs 14-17, has been mooted by the cancellation of claims 27-30, 32, 34, 37, 38, 40, 42, and 57-67 in the amendment filed on Aug. 16, 2005.

The objection to claim 7 under 37 CFR 1.75 set forth in the office action mailed on Feb. 16, 2005, paragraph 19, has been withdrawn in response to applicants' comments at page 7, lines 11-14, of their response filed on Aug. 16, 2005

3. The indicated allowability of claims 1, 3, 14, 15, 24, 25, 26, 31, 33, and 39 has been withdrawn in view of the newly discovered reference(s) to US 6,610,453 B2 (Akai) and US 4,839,255 (Hysou). Rejections based on the newly cited reference(s) follow.

4. The examiner notes that the instant specification at page 30, lines 5-8, defines the term "substantially free of wax" recited in the instant claims as indicating "that the level of

wax is preferably less than 1 w/w%, more preferably less than 0.5 w/w%, most preferably less than 0.1 w/w%."

The term binder resin recited in instant claims 19 and 33 is defined in the specification at page 41, lines 5-8, as meaning "the sum of resin constituting primary polymer particles and the resin constituting particulate resin, as described earlier."

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 3, 14, 15, 24-26, 31, 33, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akai, as evidenced by US 6,555,281 (Nozawa) and applicants' admissions at page 20, lines 16-23, and page 54, lines 14-15, of the originally filed specification, combined with Hysou.

Akai teaches a negatively chargeable toner comprising toner particles that are agglomerates of particles comprising primary polymer particles, primary colorant particles, and the charge control agent phenol amide, wherein the primary polymer particles comprise a wax. The toner particles have a volume average particle diameter of 9.0 μm, which is within the range of 3 to 12 μm. See example 10 at cols. 16-17; and reference

claim 1. Akai teaches that the heating step enhances the bond strength of the agglomerates. See col. 17, lines 42-45, and reference claim 1. The wax behenyl behenate has a melting point of 73°C, which is within the wax melting point range of 30 to 100°C recited in instant claim 31. See Nozawa, col. 31, lines 40-42. Akai identifies the charge control agent phenol amide as a negatively charging charge control agent. Col. 6, lines 46-48. Akai teaches that the wax is present in a preferred amount of 2 to 35 parts by weight based on 100 parts by weight of the binder resin. Col. 4, line 67, to col. 5, line 3. The wax amount meets the amount range of 1 to 35 parts by weight per 100 parts by weight of binder resin recited in instant claim 33. The primary polymer particles are said to have an average particle diameter of 252 nm, i.e., 0.252 μm. Example 10 at col. 17, line 18.

Akai does not explicitly state that the agglomerates of particles have a volume average particle diameter of 2 to 11 μm as recited in instant clam 24. However, as discussed above, the resultant toner particles in Akai have a volume average particle size of 9.0 μm, which is within the range recited in instant claim 24. Because the resultant toner particles are agglomerates of particles, i.e., they are stuck together, it is reasonable to conclude that the agglomerates have a volume

average particle diameter that is within the agglomerate volume average particle diameter range recited in instant claim 24. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Akai also does not identify the average particle diameter of the primary polymer particles as a volume average particle diameter as recited in instant claim 14. However, as discussed above, the average particle diameter of the Akai primary polymer particles is reported as 252 nm, i.e., 0.252 μm, which is within the numerical range of 0.02 to 3 μm for the volume average particle diameter recited in instant claim 15. Applicants' originally filed specification discloses that when the particle diameter of the primary polymer particle is less than 0.02 μm, "the agglomeration rate can be difficult to controlled [sic]. If the particle diameter exceeds 3 μm, the toner obtained by agglomeration may have too large a particle diameter to provide a high resolution toner." Originally filed specification, page 20, lines 19-23. Applicants' originally filed specification also discloses that the volume average particle diameter is determined with a UPA (Ultra Particle Analyzer produced by Nikkiso Co., Ltd.), i.e., MICROTRACK. Originally filed specification, page 20, lines 16-19, and page 54, lines 14-15.

Akai provides comparable teachings. Akai at col. 5,

lines 9-16, teaches that that when the particle diameter of the primary polymer particle is less than 0.05 μm, "the agglomeration rate can be hardly controlled to disadvantage [is difficult to control] . . . if the average particle diameter of the primary polymer particles exceeds 3 μm, the particle diameter of the particulate toner obtained by agglomeration is too great to provide a toner having a high resolution." These are substantially the same conditions taught by applicants. In addition, Akai discloses that the average particle diameter of the primary polymer particle may be determined using MICROTRACH UPA produced by NIKKISO CO., LTD, the same device taught by applicants. Col. 8, lines 19-21. Thus, it is reasonable to conclude that the Akai 252 nm diameter of the primary polymer particles is a volume average particle diameter, which is within the range recited in instant claim 14. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Akai does not exemplify a toner comprising agglomerates of particles and at least one layer of a particulate resin coated on a "substantial surface portion" of said agglomerates of particles. However, Akai teaches that particulate resin particles comprising a charge control agent can be attached to the surface of the toner particles to improve the triboelectricity of the toner. Col. 7, lines 42-45.

Hysou teaches fixing particulate resin particles comprising a charge control agent to the surface of toner base particles, where the particulate resin particles are evenly and stably imparted or distributed to the individual toner particles. Col. 10, lines 3-12, and col. 11, lines 13-22 and 61-67. According to Hysou, the resulting toner is capable of being uniformly and stably charged even in successive copying, and therefore provides images having a constant image density and a stable image quality. Col. 4, lines 44-47, and col. 12, lines 7-13. Hysou teaches that the ratio of the volume average particle size of the particulate resin particles comprising the charge control agent to the volume average particle size of the toner base particles is preferably 0.2 or less. Col. 12, lines 28-30. Hysou further teaches that coverage of the toner base particles with the particulate resin particles comprising the charge control agent is preferably from 1 to 50%; and that the amount of the particulate resin particles is 0.01 to 20 weight parts per 100 weight parts of toner base particles. Col. 12, lines 42-43 and 51-53. Hysou teaches that the particulate resin particles comprising a charge control agent can be obtained by melt-kneading the resin and the charge control agent and then pulverizing the mixture, or by a suspension polymerization method. Col. 15, lines 4-39. Hysou

exemplifies particulate resin particles comprising a charge control agent obtained by a suspension polymerization method having a volume average particle size of 1.2 μm. Example 2 at col. 29, line 58, to col. 30, line 23. Said particulate resin particles comprising a charge control agent were added to the toner base particles in an amount of 50 weight parts per 100 weight parts of toner base particles. The coverage of the resulting toner particles with the particulate resin particles was 11.5%. Col. 30, lines 23-37.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Akai and Hysou, to prepare particulate resin particles comprising the Akai charge control agent phenol amide by a suspension polymerization method as taught by Hysou in example 2, such that the resulting charge controlling particulate resin particles have a volume average particle size of 1.2 μm. It would have also been obvious to coat 100 parts by weight of the Akai toner particles with 50 parts by weight of said resulting charge controlling particulate resin particles, as taught by Hysou. That person would have had a reasonable expectation of successfully obtaining a negatively chargeable toner that is capable of being uniformly and stably charged even in successive copying, and that provides images having a constant image density and a

stable image quality.

The resulting toner rendered obvious over the combined teachings of the prior art meets the compositional limitations recited in instant claims 1, 3, 15, 25, 26, and 33. The resulting charge controlling particulate resin particles do not comprise a wax, thereby meeting the particulate resin layer limitations recited in instant claims 1 and 3. The 1.2 μm volume average particle diameter of the resultant charge controlling particulate resin particles is within the range of 0.02 to 3 μm recited in instant claim 15. As discussed supra, the volume average particle diameter of the Akai toner particles is 9.0 μm. The ratio of the volume average particle size of Akai toner particles to the volume average particle diameter of the particulate resin particles is 0.13 (i.e., 1.2/9.0), which meets the Hysou size ratio requirement. The weight ratio of the toner particles, i.e., the agglomerates of particles, to the particulate resin particles is 2 (i.e., 100/50), which is within the range of 1 to 100 recited in instant claim 26. The volume average particle diameter of the resultant coated toner particles is at most 11.4 μm, i.e., 9.0 + 1.2 + 1.2, which is within the range of 3 to 12 μm recited in instant claim 25. The Hysou charge controlling resin particles in example 2 comprise 86 wt% of a binder resin, while the Akai toner particles in

example 10 minus the charge control agent comprise 78 wt% of binder resin and 16 wt% of wax based on the weight of the toner particles. The amounts of 78 wt% and 16 wt% were determined from the information in example 10 of Akai. Accordingly, the amount of wax based on the weight of the binder resin present in the resultant toner is about 14 wt%, which is within the range of 1 to 35 parts by weight based on 100 parts by weight of binder resin recited in instant claim 33.

7. Claims 1, 3, 14, 15, 24-26, 31, 33, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,965,316 (Kmiecik-Lawrynowicz) combined with Hysou.

Kmiecik-Lawrynowicz teaches a toner comprising toner particles that are agglomerates of particles comprising primary polymer particles and primary colorant particles, wherein the primary polymer particles comprise a paraffin wax. The toner particles have a volume average particle diameter of 8.7 μm, which is within the range of 3 to 12 μm. See example 1 at cols. 19-20. The paraffin wax has a melting point in the range of about 50 to about 100°C, which is within the wax melting point range of 30 to 100°C recited in instant claim 31. Col. 5, lines 1-4. The wax is present in an amount of about 11 wt% based on the weight of the binder resin. Col. 14, lines 57-63,

and col. 20, lines 24-25. The amount of 11 wt% is determined from the information provided at col. 20, lines 22-25. The wax amount is within the wax amount range of 1 to 35 parts by weight per 100 parts by weight of binder resin recited in instant claim 33. The primary polymer particles have a volume average particle diameter of 299 nm, i.e., 0.299 μm, which is within the range of 0.02 to 3 μm recited in instant claim 14.

Kmiecik-Lawrynowicz does not explicitly state that the agglomerates of particles have a volume average particle diameter of 2 to 11 μm as recited in instant clam 24. However, as discussed above, the resultant toner particles have a volume average particle size of 8.7 μm, which is within the range recited in instant claim 24. Because the resultant toner particles are agglomerates of particles, it is reasonable to conclude that the agglomerates have a volume average particle diameter that is within the agglomerate volume average particle diameter range recited in instant claim 24. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Kmiecik-Lawrynowicz does not exemplify a toner comprising agglomerates of particles and at least one layer of a particulate resin coated on a "substantial surface portion" of said agglomerates of particles. However, Kmiecik-Lawrynowicz teaches that toner may further comprise a charge control agent.

Col. 17, lines 65-67.

Hysou teaches evenly and stably fixing particulate resin particles comprising a charge control agent to the surface. The discussion of Hysou in paragraph 7 above is incorporated herein by reference. Hysou further teaches that the charge control agent can be a negatively charging charge control agent such as a metal complex of salicylic acid. Col. 14, lines 1-12, and the charge controlling resin particles in example 2 at col. 29, line 58, to col. 30, line 22.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Hysou, to coat 100 parts by weight of the Kmiecik-Lawrynowicz toner particles with 50 parts by weight of the particulate resin particles comprising a negatively charging charge control agent in example 2 of Hysou, as taught by Hysou. That person would have had a reasonable expectation of successfully obtaining a negatively chargeable toner that is capable of being uniformly and stably charged even in successive copying, and that provides images having a constant image density and a stable image quality.

The resulting toner rendered obvious over the combined teachings of the prior art meets the compositional limitations recited in instant claims 1, 3, 15, 25, 26, and 33. The

resulting charge controlling particulate resin particles do not comprise a wax, thereby meeting the particulate resin layer limitations recited in instant claims 1 and 3. The volume average particle diameter of 1.2 μm of the Hysou charge controlling particulate resin particles in example 2 is within the range of 0.02 to 3 μm recited in instant claim 15. As discussed supra, the volume average particle diameter of the Kmiecik-Lawrynowicz toner particles is 8.7 μm. The ratio of the volume average particle size of the particulate resin particles to the Kmiecik-Lawrynowicz toner particles is 0.14 (i.e., 1.2/8.7), which meets the Hysou size ratio requirement. The weight ratio of the toner particles, i.e., the agglomerates of particles, to the particulate resin particles is 2 (i.e., 100/50), which is within the range of 1 to 100 recited in instant claim 26. The volume average particle diameter of the resultant coated toner particles is at most 11.1 μm, i.e., 8.7 + 1.2 + 1.2, which is within the range of 3 to 12 μm recited in instant claim 25. The Hysou charge controlling resin particles in example 2 comprise 86 wt% of a binder resin, while the Kmiecik-Lawrynowicz toner particles comprise 84 wt% of binder resin and 9 wt% of wax based on the weight of the toner particles. Accordingly, the amount of wax based on the weight of the binder resin in the toner is 7 wt%, which is within the

range of 1 to 35 parts by weight based on 100 parts by weight of binder resin recited in instant claim 33.

8. Claims 1, 3, 15, 26, 33, and 39 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,610,453 (Akai) in view of Hysou.

Reference claims 1, 10, and 12 each recites a toner comprising agglomerates of particles comprising primary polymer particles comprising a polymer and a wax and primary colorant particles. The reference claims recite that the wax is present in an amount of 1 to 40 parts by weight based on 100 parts by weight of the polymer, which overlaps the amount range of 1 to 35 parts by weight per 100 parts by weight of binder resin recited in instant claim 33.

The reference claims do not recite that the agglomerates of particles are coated with at least one layer of a particulate resin on a "substantial surface portion" of said agglomerate of particles as recited in instant claim 1.

Hysou teaches evenly and stably fixing particulate resin particles comprising a charge control agent to the surface of toner base particles. The discussion of Hysou in paragraph 7 above is incorporated herein by reference. Hysou further

teaches that the charge control agent can be a negatively charging charge control agent such as a metal complex of salicylic acid. Col. 14, lines 1-12, and the charge controlling resin particles in example 2 at col. 29, line 58, to col. 30, line 22.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Hysou, to coat 100 parts by weight of the toner particles recited in the reference claims of Akai with 50 parts by weight of the Hysou particulate resin particles comprising a negatively charging charge control agent in example 2, as taught by Hysou. That person would have had a reasonable expectation of successfully obtaining a negatively chargeable toner that is capable of being uniformly and stably charged even in successive copying, and that provides images having a constant image density and a stable image quality.

The resulting toner rendered obvious over the subject matter claimed in Akai combined with the teachings of Hysou meets the compositional limitations recited in instant claims 1, 3, 15, and 26. The charge controlling particulate resin particles do not comprise a wax, thereby meeting the particulate resin layer limitations recited in instant claims 1 and 3. The volume average particle diameter of 1.2 μm of the Hysou charge

controlling particulate resin particles in example 2 is within the range of 0.02 to 3 μm recited in instant claim 15. The weight ratio of the toner particles, i.e., the agglomerates of particles, to the particulate resin particles is 2 (i.e., 100/50), which is within the range of 1 to 100 recited in instant claim 26.

9. Claims 4, 6-8, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not teach or suggest a toner comprising agglomerations of particles comprising primary polymer particles and primary colorant particles and having two layers of particulate resins as recited in instant claims 4, 6-8, and 19.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (571) 273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to

Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1500~~ 1700

JLD
Oct. 28, 2005